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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/774,396	01/31/2001	David J. Lyon	M-9897 US	3069

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EXAMINER	
MEINECKE DIAZ, SUSANNA M	
ART UNIT	**PAPER NUMBER**
3623	

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/774,396	LYON ET AL.	
	Examiner	Art Unit	
	Susanna M. Diaz	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-9 and 12-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-9 and 12-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 27, 2006 has been entered.

Claims 1-5, 7-9, and 12-14 have been amended.

Claims 6, 10, 11, and 15-70 have been cancelled.

Claims 1-5, 7-9, and 12-14 are pending.

2. The previously pending rejection under 35 U.S.C. § 101 is withdrawn in response to Applicant's claim amendments.

Response to Arguments

3. Applicant's arguments with respect to claims 1-5, 7-9, and 12-14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-5, 7-9, and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lilly et al. (U.S. Patent No. 5,787,000) in view of Layden ("A Rapidly Changing Landscape") and further in view of Manugistics5, as disclosed in "Manugistics Introduces Industry's Only Extended Supply Chain Management Solution."

Lilly discloses a method of scheduling a manufacturing line comprising:

[Claim 1] generating a work schedule and a material delivery schedule in response to an outstanding customer order that includes at least one item, wherein the step of generating the work schedule includes the step of scheduling work to manufacture each item by an operation on a manufacturing line, wherein the step of generating the delivery schedule includes the step of scheduling a delivery of material to manufacture each item, wherein the scheduling of the delivery includes scheduling the delivery of the material prior to the time the material is needed according to the work schedule (col. 4, lines 33-44 -- Each customized order from a customer is integrated into a work schedule; col. 5, lines 24-67; col. 6, line 65 through col. 7, line 22 -- Resource availability, material availability, and work order information are all used to schedule the delivery of needed materials as well as to schedule the ultimate assembly of the ordered product; col. 8, lines 33-67 -- If all materials are currently available, the work order may be scheduled. Otherwise, the work order may need to be rescheduled based on the lead time of the needed materials; col. 9, lines 8-25 -- Work orders may be

scheduled by priority; Columns 9-15 discuss the forward and backward scheduling algorithms that may be used to schedule work orders);

providing the material delivery schedule for the delivery of the material to manufacture each item according to the material delivery schedule (col. 5, lines 24-67; col. 6, line 65 through col. 7, line 22 -- Resource availability, material availability, and work order information are all used to schedule the delivery of needed materials as well as to schedule the ultimate assembly of the ordered product; col. 8, lines 33-67 -- If all materials are currently available, the work order may be scheduled. Otherwise, the work order may need to be rescheduled based on the lead time of the needed materials);

wherein one or more items are manufactured on the manufacturing line according to the work schedule (abstract; col. 4, lines 33-37).

As per claim 1, Lilly does not expressly teach that the incorporation of the step of providing the work schedule to the manufacturing line, substantially immediately after generating the work schedule, for initiating work to mass produce each of the at least one item according to the work schedule nor that all recited steps are repeated a plurality of times during a manufacturing shift. However, Layden discusses order-driven manufacturing scheduling techniques (¶ 3) in which dynamic plant management is employed (¶ 5), thereby allowing dynamic factories to be "run without a plan at the floor level; orders are launched as soon as they arrive." (¶ 5) Layden's disclosed scheduling techniques are based upon well-known scheduling theories, including "backward pass"

and "forward pass" (¶ 26), both of which are utilized by Lilly. Layden's scheduling techniques allow one to instantly communicate orders to the shop floor, scheduling them as they arrive (¶¶ 5, 9). Layden states, "Integration of scheduling and material planning balances plantwide priorities against the need for optimal workstation sequencing. The order-of-work is not generated until the operation start time." (¶ 11) Material and resource constraints are taken into account in order to perform rapid resynchronization of customer orders (¶ 13). This allows for the immediate release of new orders to the floor in real time upon acceptance and the implementation of last-minute customer order changes as well as the insertion of priority orders (¶ 14). Layden's rapid order flow performs the steps of "reserving resources and material, triggering reorders, and continuously adjusting for status changes" (¶ 11). Clearly, Layden bases its principles on the common scheduling techniques utilized by Lilly (e.g., using forward and backward scheduling algorithms to incorporate material and resource availability and generate a production schedule) and enhances them by providing the work schedule to the manufacturing line, substantially immediately after generating the work schedule, for initiating work to mass produce each item according to the work schedule and repeating all recited steps a plurality of times during a manufacturing shift, thereby making the order-driven manufacturing process more efficiently and effectively responsive to new customer orders, priority orders, last-minute customer changes, etc. Consequently, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to implement these enhancements taught by Layden with the details of Lilly's production planning and scheduling system in

order to reap these benefits (i.e., making the order-driven manufacturing process more efficiently and effectively responsive to new customer orders, priority orders, last-minute customer changes, etc.).

Further regarding claim 1, the Lilly-Layden combination does not expressly teach that materials delivered from available inventory are selected from an in-transit inventory. However, "Manugistics Introduces Industry's Only Extended Supply Chain Management Solution" discloses some of the functionality of Manugistics5, which is a Web-enabled supply chain planning and decision-making tool. "By providing real-time visibility into information, including consumer demand, in-transit inventories, manufacturing schedules and plans, and shipment status across their supply chains, as well as their channel partners' supply chains, Manugistics5 will allow companies to make improved supply chain decisions." (Manugistics5: ¶ 1) Users of Manugistics5 "can 'point-and-click' their way from a high-level enterprise view to a shop floor schedule and obtain updated information about the entire supply chain channel, from suppliers, plants and distribution centers, to retail activity...With the Supply Chain Navigator, planners can determine the most profitable supply chain strategy for sourcing, production, inventory, and vendor/carrier commitments, based on the real-world and real-time constraints of the supply chain." (Manugistics5: ¶ 5) Manugistics5's floor schedule is integrated with inventory data in order to facilitate decision-making (Manugistics5: ¶¶ 5, 9) while inventory management capabilities include the ability to monitor in-transit inventory (Manugistics5: ¶ 7). Since the Lilly-Layden combination is applied to an order-driven manufacturing environment (in which perfect timing of the

arrival of needed materials is crucial for the reasons discussed above) and Manugistics5 facilitates real-time decision-making in a supply chain, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to adapt the Lilly-Layden combination to schedule the delivery of materials based on available inventory, including in-transit inventory, in order to facilitate the prevention of and/or quick resolution of conflicts with respect to product availability by allowing users "to make the best scheduling decisions possible" (as suggested by "Manugistics Introduces Industry's Only Extended Supply Chain Management Solution," see ¶ 6), thereby improving the overall efficiency of the supply chain.

[Claim 2] Regarding claim 2, since the Lilly-Layden combination teaches the details of a production planning and scheduling system that resynchronizes the production schedule and ordering of materials in real-time responsive to new customer orders, priority orders, last-minute customer changes, etc., the Examiner asserts that the limitation "wherein the scheduling of the delivery of the material prior to the time the material is needed according to the work schedule includes scheduling the delivery of the material at most one repetition prior to the time the material is needed" is addressed by the Lilly-Layden combination.

[Claim 3] Lilly discloses that the material is delivered from an available inventory of material at a material source (col. 5, lines 24-67; col. 8, lines 33-67 -- Inherently, the entity that makes a material available can be viewed as a material source).

[Claims 4, 5] Since Lilly teaches that a material availability is assessed by determining when a supply will be received into inventory (col. 8, lines 33-67), this

implies that the needed materials may be ordered from an external inventory, including a supplier inventory. By definition, an entity that supplies another entity with materials is a supplier of those materials.

[Claim 7] Lilly discloses that the generating a work schedule comprises adding work to the work schedule and the generating a material delivery schedule comprises adding a delivery of the identified material from an available inventory of material to an operation of at least one operation on a manufacturing line to the material delivery schedule (col. 4, lines 33-44 -- Each customized order from a customer is integrated into a work schedule; col. 5, lines 24-67; col. 6, line 65 through col. 7, line 22 -- Resource availability, material availability, and work order information are all used to schedule the delivery of needed materials as well as to schedule the ultimate assembly of the ordered product; col. 8, lines 33-67 -- If all materials are currently available, the work order may be scheduled. Otherwise, the work order may need to be rescheduled based on the lead time of the needed materials; col. 9, lines 8-25 -- Work orders may be scheduled by priority; Columns 9-15 discuss the forward and backward scheduling algorithms that may be used to schedule work orders);

[Claim 8] Lilly discloses that the adding the work to the work schedule comprises adding the work to the work schedule at a start time; and the adding the delivery to the material delivery schedule comprises adding the delivery to the material delivery schedule at a material delivery time prior to the start time (col. 4, lines 33-44 -- Each customized order from a customer is integrated into a work schedule; col. 5, lines 24-67; col. 6, line 65 through col. 7, line 22 -- Resource availability, material availability, and

work order information are all used to schedule the delivery of needed materials as well as to schedule the ultimate assembly of the ordered product; col. 8, lines 33-67 -- If all materials are currently available, the work order may be scheduled. Otherwise, the work order may need to be rescheduled based on the lead time of the needed materials; col. 9, lines 8-25 -- Work orders may be scheduled by priority; Columns 9-15 discuss the forward and backward scheduling algorithms that may be used to schedule work orders);

[Claim 9] Lilly discloses determining an expected availability of the identified material from the available inventory and wherein the adding the work to the work schedule includes adding the work at a start time after the expected availability of the identified material (col. 4, lines 33-44 -- Each customized order from a customer is integrated into a work schedule; col. 5, lines 24-67; col. 6, line 65 through col. 7, line 22 -- Resource availability, material availability, and work order information are all used to schedule the delivery of needed materials as well as to schedule the ultimate assembly of the ordered product; col. 8, lines 33-67 -- If all materials are currently available, the work order may be scheduled. Otherwise, the work order may need to be rescheduled based on the lead time of the needed materials; col. 9, lines 8-25 -- Work orders may be scheduled by priority; Columns 9-15 discuss the forward and backward scheduling algorithms that may be used to schedule work orders).

[Claim 12] Lilly discloses that the adding the work to the work schedule comprises adding the work to the work schedule according to a priority of the customer order (col. 5, lines 62-63; col. 9, lines 12-19).

[Claim 13] Lilly discloses that the adding the work to the work schedule comprises adding the work to the work schedule according to an order date of the customer order (Columns 9-15 discuss the forward and backward scheduling algorithms that may be used to schedule work orders).

[Claim 14] Lilly discloses that the item is a commodity (col. 4, lines 35-38).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susanna M. Diaz whose telephone number is (571) 272-6733. The examiner can normally be reached on Monday-Friday, 10 am - 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Susanna M. Diaz
Primary Examiner
Art Unit 3623

March 20, 2006